

Risk Assessment

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Risk Assessment and Core Affect

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Abstract

This research examined how risk perception and risk taking behaviors change when core affect is manipulated. Core affect is defined in terms of valence (positive or negative) and activation (high or low). Slideshows from the International Affective Picture System (IAPS) were shown to 129 Psychology 100 students, and used to put participants into one of the four affective quadrants. They were then given one measure of risk perception and two measures of risk taking. While the results were not significant, a number of confounds were discussed, most notably the participants lack of statistical familiarity, and the need for a manipulation check to confirm the IAPS can induce affect.

Risk Assessment and Core Affect

Risk is ever-present in the world around us. Our response to this risk varies widely. Some people perceive more risk than do others; some people are more accepting of risk taking than others. However, in addition to the response to risk varying between people, it also varies within a single person. This happens both across one's lifetime, as experiences shape one's perceptions about the world, and in much shorter time periods. Risk response changes as rapidly as mood, and is significantly affected by mood (Forgas & George, 2001; Schwarz & Skurnik, 2003; Seo, Feldman Barrett, & Bartunek, 2004).

First risk must be defined more specifically. There are two aspects of risk discussed in this research, risk perception and risk taking. Risk perception is the amount of risk a person sees in a particular activity. This is the cognitive aspect of risk. Risk taking is behavioral in nature. It is how much risk one will engage in. One important effect of these two aspects of risk is on our decision making. As people perceive more risk in an activity they are, generally, less likely to partake in that activity. And, obviously, deciding to take greater risks is related to decision making as well. Both risk taking and risk perception are included in this study to compare the effects of mood on each of them. Often studies of risk will either not make a distinction between the two aspects of risk, or will only examine one of them (e.g. Schwarz & Skurnik, 2003).

Mood will be discussed in a very exact manner as well, using the concept of core affect, specifically Russell's circumplex model of core affect (Figure 1). He first described this model in his 1980 paper, and has since refined it (Russell, 2003; Russell, Lewicka, & Niit, 1989). This model provides a very precise definition of mood. Russell's circumplex is split along two axes, valence (commonly thought of as happiness

or sadness) along the x-axis, and activation along the y-axis. We can place a given mood on the circumplex just as we would any point on a graph. Excitation becomes positive valence and high activation, nervous feelings equate to negative valence and high activation, serene feelings correspond to positive valence and low activation, while depressed feelings become negative valence and low activation. Having this definition of affect allows different researchers to speak of various moods, and know exactly what each one means. It has the effect of quantifying mood. However, instead of a numerical definition, it has a specific location on the circumplex.

In the past, a significant amount of research (e.g. Erez & Isen, 2002; Seo, et al., 2004; Simon, 1967) has looked at decision making and valence. Common findings supported the spreading activation model. This model states that people's current mood affects the way they see the world. When they are in a positively valenced mood, the rest of the world around them appears more positive than if their affect is negatively valenced. Positive valence causes goals to appear more valuable, obstacles to look smaller, and more easily overcome, and the chances of success to be viewed more optimistically (Seo et al., 2004). Similarly this model predicts that as valence increases, risk perception will decrease and risk taking behavior will increase (Mano, 1994). If goals are more attainable, they are seen as less risky endeavors. Also if they are more attainable and more highly valued, the likelihood that one will attempt to reach that goal increases.

There is not a similar literature underpinning a relationship between activation and decision making. Seo et al. (2004) did postulate, based on Brehm (1999) and Cacioppo, Gardner, and Berntson (1999) that "people in more activated feeling states,

regardless of whether they feel pleasant or unpleasant, are likely to devote more effort to a given task.” The only study of activation and decision making was Mano’s (1994), which was not a true experiment because he did not manipulate affect. Mano measured participants’ affect at the beginning of the study and then asked them to purchase insurance to protect themselves from a loss and to buy statistically equivalent lottery tickets. He found that participants who had a higher activation were willing to pay less for insurance than those with a low activation, suggesting that the insurance didn’t mean as much to the participants with higher activations. This shows that higher activation and risk taking are correlated, though it doesn’t speak to causation. Mano also stated that activation was the only variable to correlate with risk taking; that is, valence was not part of the equation.

This dearth of research on activation, and conflicting findings necessitate further research looking at activation and valence together. A second reason for studying both activation and valence is that it is more feasible to study activation and valence together, and then separate them statistically, than to attempt to separate one from the other operationally. Separating one piece of an emotion from the rest of the emotion is not logical.

The International Affective Picture System (IAPS) was used to manipulate mood. This is a large set of digital photographs developed by Lang, Bradley, and Cuthbert (2005). They have been tested in a number of cultures around the world, and across age ranges, and have been found to be reliable in participants’ ratings of the photos’ valence and activation (Ribeiro, Pompeia, & Bueno, 2005; Verschuere, Crombez, & Koster, 2001).

Further, the pictures have been found to reliably induce affect in participants, and this affect is the same as the affective ratings the pictures received in past studies (Davis, Rahman, Smith, & Burns, 1995). Davis et al. showed participants slides from the IAPS. Participants were asked to report their affect based on the same rating system that Lang et al (2005) used. Then the participants were fitted with a facial Electromyogram (EMG) to measure their facial movements, and by proxy, induced affect, in response to the IAPS slides. Davis et al. found that participants' self report of their affective states and their EMG data were highly correlated. One caveat to the study is that the reactions found were very weak. When compared with the weakest voluntary facial movements the participants were capable of making, which are barely visible to the unaided eye, the movements caused by the reactions to the slides were smaller still. This means that, while the IAPS slides are capable of inducing affect, the induced mood is very weak.

The above research leads to the hypotheses that by showing the participants a series of photos from one of four affective states the participants will be put into that corresponding mood and respond in the following ways to risk taking and risk perception: When valence is positive, risk perception will decrease and risk taking will increase, because goals will seem more desirable and more obtainable, and obstacles will appear smaller. When valence is negative, risk perception will increase and risk taking will decrease. When activation is high, risk taking will increase because people will be more persistent in their actions. If risk taking is going to increase, logically risk perception should decrease, but there is currently no research base for this prediction. Similarly when activation is low, risk taking will decrease due to less persistence, and risk perception should increase. These hypotheses are summarized in Figure 2.

Method

Participants

One hundred and twenty-nine undergraduate students in Psychology 100 self-selected into this study through the REP program. Approximately half of the participants were female.

Materials

This study used the International Affective Picture System (IAPS; Lang et al., 2005) to manipulate mood. Ten slides were chosen for each quadrant of the core affect circumplex, and were displayed for eight seconds each. These were chosen by finding the most extreme ratings on the combined dimensions, valence and activation, that would not be ethically questionable (pictures of mutilations and the like). Figure 3 lists and briefly describes the slides used by quadrant.

Three measures of risk were used. The first measure of risk taking is taken from Mano (1994), and is a series of lotteries of the form “The most I would pay for a ticket with an X% chance of winning \$Y is: ____” (Appendix A, pp. 5-13). The second measure of risk taking is Kogan and Wallach’s Choice Dilemma Questionnaire (1964), with slight changes to make the questions gender neutral. These questions give real life examples of decision dilemmas, and ask participants to give the minimum probability of success necessary in order to take a given risk (Appendix A, pp. 14-19). The risk perception measure was constructed by selecting 14 risk perception questions from three papers, Fischhoff, Gonzalez, and Lerner (2005), Gasper and Clore (1998), and Gasper and Clore (2000) (Appendix A, p. 3).

Design

This study is a 2 (Valence) x 2 (Activation) x 2 (Question order) factorial design. The slideshow's valence was positive or negative, and the activation was high or low. The risk perception measure and Mano's lottery tickets were alternated in order. Half of the packets were set up with the lottery tickets first, and half with the risk perception questions first. This was to look for any order effects between the two measures. The Choice Dilemma Questionnaire was always the last measure the participants saw. Each question in this measure was long and in depth, and there was concern that the length and necessary concentration might negate the induced mood.

In order to maintain even groups, participants were assigned to the computers in order. The computers were numbered 1-8. The first participant was assigned to computer 1, and so on. The first participant in the next group was assigned to the computer after the last participant in the previous group. For example if the first two groups had three participants each, the first group would be seated at computers 1-3, and the second group at computers 4-6.

Procedure

Participants were brought into the computer lab, and seated at computers set apart so that they could not see each others' monitors. Eight computers were set up with Microsoft PowerPoint® slide shows containing the IAPS pictures. There were four different sets of pictures, one for each affective quadrant (positive valence and low activation, positive valence and high activation, negative valence and low activation, negative valence and high activation). There were two computers loaded with each set of pictures. On the desk in front of the computers was a packet containing the three measures of risk, and instructions (Appendix A, pp. 1-2).

Microsoft PowerPoint® software was used to show the IAPS slides, as well as give partial instructions. The first screen instructed participants not to begin until instructed. Verbal instructions were then read (Appendix B) telling the participants that the slideshow would proceed automatically, and to click the mouse button one time to begin the show. The last slide instructed participants to open the packet containing the measures. When they finished the packet they handed it to the experimenter, received a written debriefing (Appendix C), and left the experiment.

Results

Of the 129 students who participated, six students' data were eliminated. The first student filled out an entire measure incorrectly. Three students did not differentiate between risks on the risk perception measure. Two students entered values on the risk perception model that were at odds with common sense. Specifically they responded to the question "What are the odds that you will die in the next 12 months?" with an answer of 100%. No student can know with 100% certainty that he or she will die in less than a year, so these answers were taken to be indicative of a participant not taking the questions seriously. All data were eliminated without knowing how the eliminations would affect the results.

The order of the measures was not significant according to an independent samples t-test, Risk Perception $t = -.611$, $p < .542$; Lottery Tickets $t = -.741$, $p < .460$; Choice Dilemma Questionnaire $t = .065$, $p < .949$, and so was eliminated from future analyses. The means (and standard deviations) of the responses across conditions were: risk perception 44.3 (15.0), Lotteries 20.17 (19.02), Choice Dilemma Questionnaire 5.7 (1.25). These are listed by condition in Table 1. The means (and standard deviations) of

the lottery tickets by condition were: positive valence, high activation 23.6 (18.7), negative valence, high activation 21.3 (22.4), positive valence, low activation 17.6 (15.1) and negative valence, low activation 18.17 (19.3). While not significant, this does show a general positive trend between activation and risk taking. A Multivariate Analysis of Variance (MANOVA; Table 2) was performed to find the effects of valence and activation on risk perception and risk taking. None of the values achieved significance. The MANOVA found Valence $F = .033$, $p < .992$; Activation $F = .718$, $p < .543$; Valence * Activation $F = .817$, $p < .487$. An Analysis of Variance (Table 3) was also performed for each measure. None of these reached significance either, although there were two results that were closer to significance: Activation and lotteries, $F = 1.749$, $p < .189$ and Valence * Activation and risk perception, $F = 1.997$, $p < .160$. None of the hypotheses were supported by the data, though some interesting patterns seem to emerge.

Discussion

This research looked at the effect of mood on risk taking and risk perception. Both activation and valence were examined for effects. This was an attempt to help clarify whether both valence and activation impact decision making, or if it is primarily one of the two. Specifically hypothesized was that positive valence would increase risk taking and decrease risk perception, high activation would increase risk taking and decrease risk perception, and the inverse states would have inverse results. Unfortunately none of the results in this research were significant.

The largest problem in the current research was the very large standard deviations on responses. One of the lottery questions had an expected value of \$270, but a mean of only \$82.41. Participants were willing to pay anywhere from \$1.25 to \$300 for this

lottery ticket (labeled RTD on Table 4). The standard deviation on this question was \$80.67. With data that is this widely spread, any effect would be covered up by the huge range of answers. One explanation for this could be that the participants were not taking the gambles seriously. They may have been treating them more like actual lottery tickets with normal lottery odds, than tickets with the odds that were given in the measure. This would help explain the undervaluing of the tickets. Another reasonable explanation for the widely spread data is that in Mano's study (1994), from which the lotteries are taken, the participants were students in two business classes. These students would have extensive familiarity with probabilities and monetary questions. Participants for the current research were drawn from the REP pool, which is composed of students taking Psychology 100. These students are often freshman, and may or may not have had any exposure to statistics. As Psychology is a common course for many students in varied majors they may have virtually no mathematical background at all. This may have been one of the factors that led to the huge ranges experienced in the answers.

When faced with non-significant results, the possibility that the premises the study is built upon are flawed must also be considered. In this case, there is a strong literature base of affect affecting risk assessment, and through that, decision making in general (Erez & Isen, 2002; Nygren, 1998; Seo, 2004). In addition, according to Davis et al, (1995) the IAPS slides induce affect. The measures of risk that were used are common, robust measures of risk, which leads the researcher to believe that a lack of familiarity with statistics (as shown by the high standard deviations in Table 4) is the most likely explanation for the non-significance of the results.

A further worry is that affect was not sufficiently induced. This could have occurred in a number of ways. It may be that 10 slides are not enough to alter a person's mood. A larger number of slides, or a longer display time may be necessary in order to induce affect. Also as Davis et al. (1995) stated, the induced mood was very weak. So even if the slides did induce the desired affect, it may not have been strong enough to change the way people behave with regard to risk.

There are several areas of improvement for this research. The first step would be to do a manipulation check to confirm that the IAPS can induce affect as indicated by Davis et al. (1995). A simple pre-test and post-test of core affect would provide the necessary information, and would also allow pretesting of the slides, in order to find both the slides and the conditions that are best at inducing mood. This was not feasible for the present research due to the limited time available in the lab, and the compressed timeline the research was done in.

Using students with more of a mathematical background, either from a business class like Mano (1994), or a statistics class would likely provide much cleaner, more centered data. Also doing an activity to drive home the point that these lotteries are very different from normal lottery tickets would likely improve the data. This could be as simple as showing a few examples of how common 90% is, or even renaming the tickets so they don't have the (possible) negative connotation of lottery tickets.

This research, while not providing data that supported the hypotheses, does provide a good starting point. It identifies a number of the difficulties in this research, and several ways around those problems. Future research can contribute a great deal by attempting to distinguish between activation and valence, and asking which of the two (or

if both) are responsible for the effects on risk taking and risk perception. More research should look at the relationship between risk taking and risk perception to see if they are related as simply as one would think *prima facie*, or if there is a more complex relationship.

References

- Brehm, J. W. (1999). The intensity of emotion. *Personality and Social Psychology Review*, 3: 2–22.
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, 76: 839–855.
- Davis, W. J.; Rahman, M. A.; Smith, L. J.; Burns, A. (1995). Properties of human affect induced by static color slides (IAPS): Dimensional, categorical and electromyographic analysis. *Biological Psychology*, 41 (3): 229-253.
- Erez, A., & Isen, A. M. (2002). The influence of positive affect on the components of expectancy motivation. *Journal of Applied Psychology*, 87: 1055–1067.
- Fischhoff, B.; Gonzalez, R. M.; Lerner, J. S.; Small, D. A. (2005). Evolving Judgments of Terror Risks: Foresight, Hindsight, and Emotion. *Journal of Experimental Psychology: Applied*, 11 (2): 124-139.
- Forgas, J. P.; George, J. M. (2001). Affective Influences on Judgments and Behavior in Organizations: An Information Processing Perspective. *Organizational Behavior and Human Decision Processes*, 86 (1): 3-34.
- Gasper, K.; Clore, G. L. (1998). The persistent use of negative affect by anxious individuals to estimate risk. *Journal of Personality and Social Psychology*, 74 (5): 1350-1363.
- Gasper, K.; Clore, G. L. (2000). Do you have to pay attention to your feelings to be influenced by them? *Personality and Social Psychology Bulletin*, 26 (6): 698-711.

- Kogan, N.; Wallach, M. A. (1964). *Risk Taking, a Study in Cognition and Personality*.
New York, NY: Holt, Rinehart, and Winston.
- Lang, P.J., Bradley, M.M., & Cuthbert, B.N. (2005). International affective picture system (IAPS): Digitized photographs, instruction manual and affective ratings.
Technical Report A-6. University of Florida, Gainesville, FL.
- Mano, H. (1994). Risk-taking, framing effects, and affect. *Organizational behavior and human decision processes*, 57: 38-58.
- Nygren, T. (1998). Reacting to Perceived High- and Low-Risk Win-Lose Opportunities in a Risky Decision-Making Task: Is it Framing or Affect or Both? *Motivation and Emotion*, 22: 73-98.
- Ribeiro, R. L.; Pompeia, S.; Bueno, O. F. (2005). Comparison of Brazilian and American norms for the International Affective Picture System (IAPS). *Amodeo Revista Brasileira de Psiquiatria*, 27 (3): 208-215 Associacao Brasileira de Psiquiatria, Brazil.
- Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, 39, 1161–1178.
- Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychological Review*, 110: 145–172.
- Russell, J. A.; Lewicka, M.; Niit, T. (1989). A cross-cultural study of a circumplex model of affect. *Journal of Personality and Social Psychology*, 57 (5): 848-856.
- Schwarz, N.; Skurnik, I. (2003). Feeling and Thinking: Implications for Problem Solving. In J. E. Davidson, R. J. Sternberg (Eds.), *The Psychology of Problem Solving* (pp 263-290). Cambridge University Press.

- Seo, M.; Feldman Barrett, L.; Bartunek, J. M. (2004). The role of affective experience in work motivation. *Academy of Management Review*, 29 (3): 423-439.
- Simon, H. A. (1967). Motivational and emotional controls of cognition. *Psychological Review*, 74, 29-39.
- Verschuere, B.; Crombez, G.; Koster, E. (2001). The International Affective Picture System: A Flemish validation study. *Psychologica Belgica*, 41(4): 205-217
Belgian Psychological Society, Belgium.

Table 1

Means (and standard deviations) of participants' responses to the three risk measures by valence and activation

Valence							
Negative				Positive			
	Risk Perception	Lotteries	Real Life Examples	Risk Perception	Lotteries	Real Life Examples	
Activation	High	41.9 (13.3)	21.25 (22.44)	5.8 (1.3)	45.1 (16.0)	23.65 (18.67)	5.7 (1.3)
	Low	47.4 (14.4)	18.18 (19.34)	5.6 (1.2)	43.1 (16.2)	17.62 (15.07)	5.7 (1.3)

Table 2
MANOVA test of Valence and Activation

Multivariate Tests^b

Effect		F	Hypothesis df	Error df	Sig.
Valence	Pillai's Trace	.033 ^a	3.000	117.000	.992
	Wilks' Lambda	.033 ^a	3.000	117.000	.992
	Hotelling's Trace	.033 ^a	3.000	117.000	.992
	Roy's Largest Root	.033 ^a	3.000	117.000	.992
Activation	Pillai's Trace	.718 ^a	3.000	117.000	.543
	Wilks' Lambda	.718 ^a	3.000	117.000	.543
	Hotelling's Trace	.718 ^a	3.000	117.000	.543
	Roy's Largest Root	.718 ^a	3.000	117.000	.543
Valence * Activation	Pillai's Trace	.817 ^a	3.000	117.000	.487
	Wilks' Lambda	.817 ^a	3.000	117.000	.487
	Hotelling's Trace	.817 ^a	3.000	117.000	.487
	Roy's Largest Root	.817 ^a	3.000	117.000	.487

a. Exact statistic

b. Design: Valence+Activation+Valence * Activation

Table 3

ANOVA tests of Valence and Activation split by measure of risk.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	RPAVG	242151.588 ^a	4	60537.897	269.234	.000
	RTAVG	50769.106 ^b	4	12692.276	34.810	.000
	EAVG	3963.326 ^c	4	990.832	617.571	.000
Valence	RPAVG	9.764	1	9.764	.043	.835
	RTAVG	25.940	1	25.940	.071	.790
	EAVG	.004	1	.004	.002	.961
Activation	RPAVG	93.923	1	93.923	.418	.519
	RTAVG	637.559	1	637.559	1.749	.189
	EAVG	.115	1	.115	.072	.790
Valence * Activation	RPAVG	449.019	1	449.019	1.997	.160
	RTAVG	66.917	1	66.917	.184	.669
	EAVG	.303	1	.303	.189	.665
Total	RPAVG	268909.051	123			
	RTAVG	94158.969	123			
	EAVG	4154.250	123			

a. R Squared = .900 (Adjusted R Squared = .897)

b. R Squared = .539 (Adjusted R Squared = .524)

c. R Squared = .954 (Adjusted R Squared = .952)

RPAVG = Mean of Risk Perception measure

RTAVG = Mean of Mano's Lottery Tickets

EAVG = Mean of Kogan and Wallach's Choice Dilemma Questionnaire

Table 4

*Descriptive Statistics by question***Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
RP1	123	0	100	38.52	27.175
RP2	123	2	100	52.69	25.682
RP3	123	0	60	18.00	17.638
RP4	123	0	100	57.29	28.309
RP5	121	0	75	14.88	18.801
RP6	123	0	100	42.92	25.003
RP7	123	0	100	60.87	31.105
RP8	123	0	100	58.55	25.957
RP9	123	0	100	43.80	29.447
RP10	122	0	100	35.31	22.662
RP11	123	0	100	37.39	30.308
RP12	123	0	100	35.19	25.631
RP13	123	0	100	55.91	32.515
RP14	123	5	100	68.38	29.719
RTA	123	.00	8.00	1.1339	1.01164
RTB	123	1.00	200.00	41.8943	50.00407
RTC	123	.00	10.00	2.4898	1.86545
RTD	123	1.25	300.00	82.4085	80.66888
RTE	123	.00	50.00	7.6634	9.15747
RTF	123	.50	100.00	25.3699	25.55546
RTG	123	.00	10.00	3.1472	2.32193
RTH	123	.00	50.00	3.8506	5.33305
RTI	123	.50	54.00	13.5854	13.25981
E1	123	1	10	5.75	2.106
E2	123	1	10	6.93	2.198
E3	123	1	10	5.41	2.405
E4	123	1	10	5.08	2.205
E5	123	1	10	4.62	2.338
E6	123	1	10	6.26	2.661
Valid N (listwise)	121				

RP1-RP14 = Risk Perception questions 1-14 (Appendix A, p. 3)

RTA- RTI = Mano's Lottery Tickets, labeled A-I (Appendix A, pp. 5-13)

E1-E6 = Kogan and Wallach's Choice Dilemma Questionnaire 1-6 (Appendix A, pp. 14-19)

Figure Captions

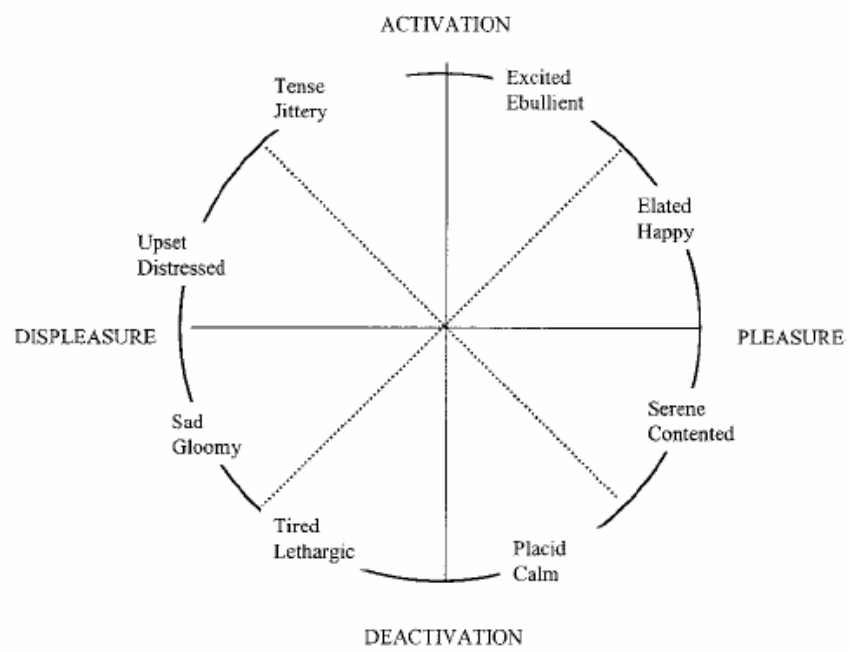
Figure 1 Russell's core affect circumplex from Russell, 2003

Figure 2 Hypotheses by core affect quadrant

Figure 3 IAPS slides used by quadrant

Figure 1

Core Affect Circumplex



(Russell, 2003)

Figure 2

Hypotheses by Condition

Negative Valence, High Activation	Positive Valence, High Activation
Risk Perception - Moderate	Risk Perception - Low
Risk Taking - Moderate	Risk Taking - High
Negative Valence, Low Activation	Positive Valence, Low Activation
Risk Perception - High	Risk Perception - Moderate
Risk Taking - Low	Risk Taking - Moderate

Figure 3

IAPS Slides used by Quadrant

<u>Negative Valence, High Affect</u>		<u>Positive Valence, High Affect</u>	
9910	Car Accident	8300	Happy Pilot
9600	Sinking Ship	8180	Cliff Divers
8485	Car Fire	8200	Water Skier
9630	Atomic Bomb	8080	Sailboat
9622	Exploding Jet	8370	Whitewater Rafting
6821	Car Jacking	5629	Mountaintop Hiker
2683	Riots	5470	Astronaut in Orbit
6250.1	Aimed Gun	8499	Rollercoaster
1525	Attack Dog	8470	Gymnast
5971	Tornado	8190	Skier
<u>Negative Valence, Low Affect</u>		<u>Positive Valence, Low Affect</u>	
9331	Homeless Man	1604	Butterfly
2590	Elderly Woman	5200	Flowers
2722	Jail Cell	2388	Kids at Beach
2399	Pained Woman	2360	Family
9110	Oil Slick	5760	Flowers and Ocean
9001	Cemetery	5551	Clouds
2490	Elderly Man	1620	Springbok
9090	Exhaust Fumes	5780	River
6010	Jail Cell	1610	Rabbit
9190	African Woman	7325	Girl Eating Watermelon

Appendix A

The following is the packet given to the participants, in its entirety.

Appendix B

Instructions

Today you will view a series of pictures on the computer monitor in front of you. The pictures will change automatically once you begin the slide show. If you feel uncomfortable with the pictures at any time you may press escape to end the slide show, and leave the experiment. At the end of the slide show you will receive further instructions on the computer. Do not talk during the experiment. Please click the mouse button now to begin the slide show.

Appendix C

Debriefing

Today you participated in a study examining the correlation between mood and risk taking behavior. The pictures you viewed were designed to put you into one of 4 moods, excited, serene, sad, or distressed. The questions you answered measured how much risk you were willing to take based on how much money you were willing to spend on each of the lottery tickets, and how risky of a situation you found as acceptable in the real life examples.

Thank you very much for your participation in this study, and if you have any further questions about it, please feel free to contact me at emmert-aronsen.1@osu.edu. As it could bias the results, and this study is integral to my senior thesis, please refrain from discussing it with people who may participate in this study in the future.